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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/719,024	12/05/2000	David Bisaro	22727/04080	3134

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EXAMINER	
HELMER, GEORGIA L	

ART UNIT	PAPER NUMBER
1638	

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/719,024	BISARO, DAVID	
	Examiner	Art Unit	
	Georgia L. Helmer	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-9,12,13,17,18,20,23 and 25-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-9,12,13,17,18,20,23 and 25-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Request for Continued Examination

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 June 2004 has been entered.

Status of the Claims

2. Applicant has, and Applicant has amended claims 7-9, 12, 13, 17, 18, 21, 23 and 25-28, and cancelled claims 1-6, 10, 11, 14-16, 19, 21, 22 and 24. Claims 7-9, 12, 13, 17, 18, 20, 23, and 25-28 are pending, and are examined in the instant action.

3. All rejections not addressed below have been withdrawn.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Priority

5. If applicant desires priority under 35 U.S.C. 371 based upon a previously filed application, specific reference to the earlier filed application must be made in the instant application. For benefit claims under 35 U.S.C. 120, 121 or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of the applications. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet.

The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. _____" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

The instant case is a 371 based on PCT/US/12680, which is a continuation of 09/092,705, which was converted to provisional application 60/150,694 filed 5 June 1998.

Claim Rejections - 35 USC § 112-second

6. Claims 7-9, 12, 13, 17, 18, 20, 23, and 25-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 and all claims dependent thereon, is indefinite because

- "a wild-type Begomovirus AL2" is unclear because no reference sequence or description is given for the "wild-type Begomovirus AL2", as stated in the Office Action of 12 October 2003.

Applicant traverses, stating primarily (Response, p.6) that the specification , figures, and sequence listings together provide all this information [re frame of reference for the amino acids which define each of the domains] and that Figure 1 shows an alignment of the amino acid sequences for several transcription activator proteins isolated from different Begomoviruses. As stated in the "brief description of the figures," the

sequences are all aligned, oriented in the customary fashion starting with amino acid 1 at the N-terminal end (located on the top left of the page, and ending with an amino acid (located at the C-terminal on the lower right side). Applicant also traverses saying that "Figure 1 shows an alignment of the amino acid sequence of several transcription activator proteins from different Begomoviruses". Applicant further traverses that "all but one of the AL2 gene products shown in Figure 1 is 129 amino acids in length". That "except for a single gap in these sequence, shown between positions 45 and 46 of the alignment, the sequence of the AL2 gene products are otherwise uninterrupted and shown in contiguous order from the amino tot the carboxy terminal amino acid". Applicant further traverses (Response, page 9) that Applicant has described the structural features of the AL2 open reading frame and the AL2 gene product, and has provided a multitude of examples of different wild-type forms of AL2 (see Figure 1, Table 1, and SEQ ID NO: 1-13 and 76-147)" .

Applicant's traversal has been considered and is unpersuasive. This information cited appears to say that different wild-types exist for various of the Begomovirus, that the length of such wild-type sequences (polynucleotide or polypeptide) may vary. This implies that SEQ ID NO: 1-13 are different wild-type Begomoviruses and that SEQ ID NO: 76-147 are also different wild-type Begomoviruses. This is at least 83 different wild-type Begomoviruses referred to. Therefore, Applicant appears to support the Office's rejection that no reference sequence or description is given for "a wild-type Begomovirus AL2."

In claim 7, line 11, "carboxy-terminal acidic activation domain" lacks antecedent basis. All dependent claims of claim 7 are also rejected for this reason.

Claim Rejections - 35 USC § 112, first paragraph
Written description

7. Claims 7-9, 12, 13, 17, 18, 20, 23, and 25-28 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant has amended claim 7 to recite:

A recombinant polynucleotide that comprises a mutant form of a wild-type Begomovirus AL2 open reading frame, and encodes

a mutant Begomovirus transcription activator protein wherein said

wild-type Begomovirus AL2 open reading frame encodes a wild-type Begomovirus transcription activator protein having a carboxy terminal domain and a cysteine-histidine domain, and

wherein said mutant Begomovirus AL2 open reading frame comprises

a first mutation in the region which encodes the carboxy-terminal acidic activation domain, and a second mutation of the region which encodes the cysteine-histidine domain, and wherein the mutant Begomovirus transcription activator protein lacks or has reduced transcription activation and SNF-1 kinase binding activities as compared to the wild-type Begomovirus transcription activator protein.

Applicant traverses saying primarily that Claim 7 as amended identifies both structural and functional features of the mutant transcription activator protein, and is supported in the specification by description of a variety of specific mutant forms of the protein (Response of 23 December 2003, p. 8), that the mutant proteins all have mutation in both the carboxy-terminal acidic activation domain and the cysteine-histidine domain. Applicant traverses further that Applicant has provided many examples of mutations that have been introduced in the AL2 open reading frame to provide mutant transcription activator protein, including of mutant proteins in which deletions of the carboxy terminal domain, particularly deletions of one or more of the 15 terminal amino acids, result in loss of transcription activator protein (specification p. 13, line 24-32). Applicant has also provided an example of mutations to the cysteine-histidine domain where replacement of positively charged histidine reside with a neutral alanine resulted in loss of SNF-1 kinase binding activity; that with all this detail regarding the structure and functional properties of a variety of forms of mutant Begomovirus transcription activator protein, one of ordinary skill would recognize that Applicant had possession of the claimed invention at the time the Applicant was filed.

Applicant's traversal is unpersuasive. The written description rejection is maintained. The polynucleotide of claim 7 lacks any positive statement of function. The limitation of "lacks or reduced" is not a positive statement of function, since no functional information on the claimed entire polynucleotide is provided. The Office interprets "mutation" broadly to comprise nucleic acid additions, deletions, substitutions, and combinations thereof, given the lack of specific definition of "mutation", and the

absence of a reference wild-type sequence. Therefore, the polynucleotide of claim 7 has no indication of the size of the polynucleotide, the composition thereof, and the presence or absence of conserved polynucleotides, including specific sequence motifs .

There is no structural description of what comprises the modified transcription activator protein. Applicants are claiming a genus of sequences, yet there is no description of the structural features that define the genus.

Therefore, given the lack of written description in the specification with regard to the structural and physical characteristics of the claimed compositions, one skilled in the art would not have been in possession of the genus claimed at the time this application was filed. (see Written Description Requirement published in Federal Register/Vol.66, No. 4/ Friday, January 5, 2001/Notices; p. 1099-1111.)

Claim Rejections - 35 USC § 112-Enablement

8. Claims 7-9, 12, 13, 17, 18, 20, 23, and 25-28 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, as stated in the last Office Action.

Applicant traverses, stating primarily (Response, p.9) that ample guidance has been provided that to enable one of ordinary skill to prepare the mutant transcription activator protein as recited in claim 7, that Applicant has described "the structural features of the AL2 open reading frame and the AL2 gene product and has provided a multitude of examples of different wild-type forms of AL2", citing Figure 1, Table 1, and

SEQ ID NO: 1-13 and 76-147. Applicant further says that Applicant has also taught a number of examples of mutations using primer construct sequences, citing example 21 and Figure 2.

Applicant's traversal is unpersuasive. Example 21, (specification, p. 17) is entitled "Transgenic plants comprising a single domain mutant AL2 genes. The example names seven TrAP (transcription activator protein) proteins: TrAP F123A, TrAP F124A, TrAP F128A, ... TrAP 1-83. These specific constructs and those comprising a double domain mutant (specification, p. 20, line 11, bridging to p. 21, line16) are constructed using a specified wild-type AL2 DNA , the tomato golden mosaic virus (TGMV) as template, and as well as specified PCR primers (Figure 2). Figure 2 "shows the 5' and 3' primers used to construct substitution mutants of the 3' region of the TGMV AL2 gene" (specification, page 1). Thus Applicant's examples name the specific wild-type (TGMV) as well as the specified PCR primers for designated directed mutations, possessing a predicted size and sequence. However, these are not limitation set forth in the claims.

Applicant's arguments are not in accord with the scope of the claims.

9. No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Georgia L. Helmer whose telephone number is 571-272-0796. The examiner can normally be reached on 8:30 - 5:00.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on 571-272-0804. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Georgia Helmer PhD
Patent Examiner
Transgenic Plants, art unit 1638
1 September 2004

ELIZABETH MCELWAIN
PRIMARY EXAMINER